

CLAIMS

1. An optical isolator having an input and an output, the optical isolator comprising:
 - a phase retardation plate positioned at the input; and
 - an optical rotator positioned between the phase-retardation plate and the output, the isolator comprising a Faraday rotator positioned between a first polarizer and a second polarizer.
2. The optical isolator of claim 1 wherein the optical rotator further comprises a second Faraday rotator positioned between the second polarizer and a third polarizer.
3. The optical isolator of claim 1 wherein the phase retardation plate is a half wave ($\lambda/2$) phase retardation plate.
4. The optical isolator of claim 1 wherein the phase retardation plate is positioned at a selected angle relative to a light path.
5. The optical isolator of claim 1, further comprising a polarization-maintaining fiber coupled to the output.
6. The optical isolator of claim 1, further comprising a polarization-maintaining fiber coupled to the input.
7. The optical isolator of claim 1, further comprising a radiation source coupled to the input.
8. The optical isolator of claim 7 wherein the radiation source is a tunable laser.
9. A process comprising:

rotating a polarization of an optical signal using a phase retardation plate; and

following the rotation of the polarization of the optical signal using a phase retardation plate, further rotating the polarization of the optical signal using an optical rotator.

10. The process of claim 9 wherein further rotating the polarization of the optical signal comprises:

filtering the optical signal passing through the phase retardation plate;

rotating the filtered optical signal using a Faraday rotator; and

filtering the optical signal passing through the Faraday rotator.

11. The process of claim 10, wherein the Faraday rotator is a first Faraday rotator, and wherein further rotating the polarization of the optical signal further comprises:

rotating the filtered optical signal using a second Faraday rotator; and

filtering the optical signal passing through the second Faraday rotator.

12. The process of claim 9 wherein the phase retardation plate is a half-wave ($\lambda/2$) phase retardation plate.

13. The process of claim 9 further comprising varying the wavelength of the optical signal.

14. The process of claim 9 further comprising inputting the optical signal to the phase retardation plate using a polarization-maintaining fiber.

15. The process of claim 9 further comprising outputting the signal from the optical rotator using a polarization maintaining fiber.

16. A system comprising:

a radiation source;

an optical isolator having an input and an output, the radiation source being coupled to the input, and the optical isolator comprising:

a phase retardation plate positioned at the input,

an optical rotator positioned after the phase-retardation plate, the optical rotator comprising a first Faraday rotator positioned between a first polarizer and a second polarizer; and

a polarization-maintaining fiber connected to the output of the optical isolator

17. The system of claim 16 wherein the isolator is a first isolator, and further comprising a second Faraday rotator positioned between the second polarizer and a third polarizer.
18. The optical isolator of claim 16 wherein the radiation source is coupled to the input using a polarization-maintaining fiber.
19. The system of claim 16 wherein the radiation source is tunable.
20. The system of claim 16 wherein the radiation source is a laser.
21. The optical isolator of claim 16 wherein the phase retardation plate is a half wave ($\lambda/2$) phase retardation plate.
22. The optical isolator of claim 16 wherein the phase retardation plate is positioned at a selected angle relative to a light path.